

**FORMAT FOR CORRELATION TO THE GEORGIA PERFORMANCE STANDARDS**

**Subject Area:** Mathematics 1                      **State-Funded Course:** \_\_\_\_\_

**Textbook Title:** Algebra I Mathematics in Context

**Publisher:** Cord Communications

*The GPSs for grades K-12 Science and 9-12 Mathematics may be accessed on-line at: <http://www.georgiastandards.org/>.*

<b><u>Standard</u></b> (Cite Number)	<b>Standard</b> (Cite specific standard)	<b><u>Where Taught</u></b> (If print component, cite page number; if non-print, cite appropriate location.)
	<b>Algebra</b>	
<b>MM1A1</b>	<b>Students will explore and interpret the characteristics of functions, using graphs, tables, and simple algebraic techniques.</b>	<b>Chapter 4, Chapter5, Chapter 11</b>
MM1A1a	Represent functions using function notation.	283–284, 627
MM1A1b	Graph the basic functions $f(x) = x^n$ , where $n = 1$ to $3$ , $f(x) = \sqrt{x}$ , $f(x) =  x $ , and $f(x) = 1/x$ .	225–230, 241–245, 292–293, 296–299, 620–623, 626–629
MM1A1c	Graph transformations of basic functions including vertical shifts, stretches, and shrinks, as well as reflections across the $x$ - and $y$ -axes.	298–301, 622–623
MM1A1d	Investigate and explain the characteristics of a function: domain, range, zeros, intercepts, intervals of increase and decrease, maximum and minimum values, and end behavior.	218–222, 249–252, 280–284, 296–301, 621, 626–629, 645–647
MM1A1e	Relate to a given context the characteristics of a function, and use graphs and tables to investigate its behavior.	218–222, 249–252, 265–275, 323–337, 620–623, 626–629, 645–647, 664–675
MM1A1f	Recognize sequences as functions with domains that are whole numbers.	281–282, Supplement 53–55
MM1A1g	Explore rates of change, comparing constant rates of change (i.e., slope) versus variable rates of change. Compare rates of change of linear, quadratic, square root, and other function families.	218–222, 225–230, 291–294, 296–301, 312–313, 620–623
MM1A1h	Determine graphically and algebraically whether a function has symmetry and whether it is even, odd, or neither.	Supplement 56–60
MM1A1i	Understand that any equation in $x$ can be interpreted as the equation $f(x) = g(x)$ , and interpret the solutions of the equation as the $x$ -value(s) of the intersection point(s) of the graphs of $y = f(x)$ and $y = g(x)$ .	Supplement 52
<b>MM1A2</b>	<b>Students will simplify and operate with radical expressions, polynomials, and</b>	<b>Chapter 10, Chapter 12</b>

	<b>rational expressions.</b>	
MM1A2a	Simplify algebraic and numeric expressions involving square roots.	694
MM1A2b	Perform operations with square roots.	717–720
MM1A2c	Add, subtract, multiply, and divide polynomials.	558–563
MM1A2d	Expand binomials using the Binomial Theorem	Supplement 76–80
MM1A2e	Add, subtract, multiply, and divide rational expressions.	581–584, Supplement 81–86
MM1A2f	Factor expressions by greatest common factor, grouping, trial and error, and special products limited to the formulas below. $(x + y)^2 = x^2 + 2xy + y^2$ $(x - y)^2 = x^2 - 2xy + y^2$ $(x + y)(x - y) = x^2 - y^2$ $(x + a)(x + b) = x^2 + (a + b)x + ab$ $(x + y)^3 = x^3 + 3x^2y + 3xy^2 + y^3$ $(x - y)^3 = x^3 - 3x^2y + 3xy^2 - y^3$	594; 597–598; 601–602; 604; 633–637
MM1A2g	Use area and volume models for polynomial arithmetic.	559, 590–591; 593; 607–608
<b>MM1A3</b>	<b>Students will solve simple equations.</b>	<b>Chapter 11, Chapter 12</b>
MM1A3a	Solve quadratic equations in the form $ax^2 + bx + c = 0$ , where $a = 1$ , by using factorization and finding square roots where applicable.	Chapter 11
MM2A3b	Solve equations involving radicals such as $\sqrt{x + b} = c$ , using algebraic techniques.	717–720
MM2A3c	Use a variety of techniques, including technology, tables, and graphs to solve equations resulting from the investigation of $x^2 + bx + c = 0$ .	Chapter 11
MM2A3d	Solve simple rational equations that result in linear equations or quadratic equations with leading coefficient of 1.	Supplement 90–94
<b>MM1G1</b>	<b>Students will investigate properties of geometric figures in the coordinate plane.</b>	<b>14–15, 691–692, Supplement</b>
MM1G1a	Determine the distance between two points.	14–15,
MM1G1b	Determine the distance between a point and a line.	Supplement 1–3
MM1G1c	Determine the midpoint of a segment.	Supplement 4–9
MM1G1d	Understand the distance formula as an application of the Pythagorean theorem.	691, Supplement 4–9
MM1G1e	Use the coordinate plane to investigate properties of and verify conjectures related to triangles and quadrilaterals.	254, 692–693, 700,
<b>MM2G2</b>	<b>Students will understand and use the language of mathematical argument and justification.</b>	<b>Supplement 10–51</b>
MM2G2a	Use conjecture, inductive reasoning, deductive reasoning, counterexamples, and indirect proof as appropriate.	Supplement 17–37
MM2G2b	Understand and use the relationships among a statement and its converse, inverse, and contrapositive.	Supplement 29–34

<b>MM2G3</b>	<b>Students will discover, prove, and apply properties of triangles, quadrilaterals, and other polygons.</b>	<b>Supplement 95–183</b>
MM2G3a	Determine the sum of interior and exterior angles in a polygon.	Supplement 154–158
MM2G3b	Understand and use the triangle inequality, the side-angle inequality, and the exterior-angle inequality.	Supplement 103–115
MM2G3c	Understand and use congruence postulates and theorems for triangles (SSS, SAS, ASA, AAS, HL).	Supplement 116–134
MM2G3d	Understand, use, and prove properties of and relationships among special quadrilaterals: parallelogram, rectangle, rhombus, square, trapezoid, and kite.	Supplement 148–183
MM2G3e	Find and use points of concurrency in triangles: incenter, orthocenter, circumcenter, and centroid.	Supplement 142–147
<b>MM1D1</b>	<b>Students will determine the number of outcomes related to a given event.</b>	<b>Chapter 6</b>
MM1D1a	Apply addition and multiplication principles of counting.	356–361; 368–373
MM1D1b	Calculate and use simple permutations and combinations.	Supplement 61–68
<b>MM1D2</b>	<b>Students will use the basic laws of probability.</b>	<b>Chapter 6</b>
MM1D2a	Find the probabilities of mutually exclusive events.	356–359, 378–385
MM1D2b	Find the probabilities of dependent events.	368–373, 378–385
MM1D2c	Calculate conditional probabilities.	342–345, 356–357, 378–385
MM1D2d	Use expected value to predict outcomes.	342–345, 378–385
<b>MMD1</b>	<b>Students will relate samples to a population.</b>	<b>Chapter 7 Supplement 69–75</b>
MM1D3a	Compare summary statistics (mean, median, quartiles, and interquartile range) from one sample data distribution to another sample data distribution in describing center and variability of the data distributions.	390–394; 415–418
MM1D3b	Compare the averages of the summary statistics from a large number of samples to the corresponding population parameters.	Supplement 69–71
MM1D3c	Understand that a random sample is used to improve the chance of selecting a representative sample.	Supplement 72–74
<b>MM1D4</b>	<b>Students will explore variability of data by determining the mean absolute deviation (the average of the absolute values of the deviations).</b>	<b>420–423</b>
<b>MM1P1</b>	<b>Students will solve problems (using appropriate technology).</b>	<b>Used throughout especially in Math Applications</b>
MM1P1a	Build new mathematical knowledge through problem solving.	Used throughout especially in Math Applications
MM1P1b	Solve problems that arise in mathematics and in other contexts.	Used throughout especially in Math Applications

MM1P1c	Apply and adapt a variety of appropriate strategies to solve problems.	Used throughout especially in Math Applications and Problem Solving feature
MM1P1d	Monitor and reflect on the process of mathematical problem solving.	Used throughout especially in Problem Solving feature
<b>MM1P2</b>	<b>Students will reason and evaluate mathematical arguments.</b>	<b>Used throughout, Supplement</b>
MM1P2a	Recognize reasoning and proof as fundamental aspects of mathematics.	Used throughout, Supplement
MM1P2b	Make and investigate mathematical conjectures.	Used throughout, Supplement
MM1P2c	Develop and evaluate mathematical arguments and proofs.	Used throughout, Supplement
MM1P2d	Select and use various types of reasoning and methods of proof.	Used throughout, Supplement
<b>MM1P3</b>	<b>Students will communicate mathematically.</b>	<b>Used throughout</b>
MM1P3a	Organize and consolidate their mathematical thinking through communication.	Used throughout especially Critical Thinking and Think and Discuss questions
MM1P3b	Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.	Used throughout especially Critical Thinking and Think and Discuss questions
MM1P3c	Analyze and evaluate the mathematical thinking and strategies of others.	Used throughout especially Critical Thinking and Think and Discuss questions
MM1P3d	Use the language of mathematics to express mathematical ideas precisely.	Used throughout especially Critical Thinking and Think and Discuss questions
<b>MM1P4</b>	<b>Students will make connections among mathematical ideas and to other disciplines.</b>	<b>Used throughout especially in Math Applications</b>
MM1P4a	Recognize and use connections among mathematical ideas.	Used throughout especially in Math Applications
MM1P4b	Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	Used throughout especially in Math Applications
MM1P4c	Recognize and apply mathematics in contexts outside of mathematics.	Used throughout especially in Math Applications
<b>MM1P5</b>	<b>Students will represent mathematics in multiple ways.</b>	<b>Used throughout</b>
MM1P5a	Create and use representations to organize, record, and communicate mathematical ideas.	Used throughout
MM1P5b	Select, apply, and translate among mathematical representations to solve problems.	Used throughout
MM1P5c	Use representations to model and interpret physical, social, and mathematical phenomena.	Used throughout